MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Principals**			**Module Delivery**	
Module Type	**S**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**ATU12012**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level		1	**Semester of Delivery**		1
Administering Department		ATU12	**College**	PMTE	
Module Leader	Name		**e-mail**	E-mail	
Module Leader's Acad. Title		Professor	**Module Leader's Qualification**		Ph.D.
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name		Name	**e-mail**	E-mail	
Scientific Committee Approval Date		01/06/2023	**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	Computer Science Principles is an introductory college-level computing course that introduces students to the breadth of the field of computer science. Students learn to design and evaluate solutions and to apply computer science to solve problems through the development of algorithms and programs. They incorporate abstraction into programs and use data to discover new knowledge. Students also explain how computing innovations and computing systems—including the internet work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• Gain an understanding of the underpinning theories of fundamental principles and technologies within the area of computer science • Gain technical expertise in the field of computer science, which will enable you to excel in this fast-developing area. • Gain an understanding of the interplay between computer science theory and practice • Gain appropriate software development and programming skills. • Be aware of the management, economic, legal, social, professional and ethical issues relating to computer science. • Learn and work both independently and within groups. • Develop the necessary study skills and knowledge to pursue further study. Develop the professional skills necessary for a career in the IT industry
Indicative Contents المحتويات الإرشادية	• Formulating approaches for problem solving. • Evaluation and critical analysis using a range of techniques. • Self-appraisal and review of personal practice. • Design and implement solutions for practical problems.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Knowledge is assessed by • examinations, both unseen and based on previously supplied case studies • extended essays and reports • multiple choice tests Thinking skills are assessed by • all assessment tasks set, particularly those requiring critical evaluation • self-appraisal of performance • use of appropriate problem solving skills Practical skills are assessed by • assessment tasks requiring use of general and specialised IT applications

	• use of equipment in practicals and presentations Skills for life and work (general skills) are assessed by • evidence of group and team working • completion of placement year • ability to work to time constraints Students with disabilities and/or particular learning needs should discuss assessments with the Course Leader to ensure they are able to fully engage with all assessment within the course.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	7
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	52	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	LO #1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered

Week 1	**Introduction to programming using (Matlab)** - Introduction to (Matlab) Menu bar , tool bar, and program windows
Week 2	**Format & numbers** - Real, Integer , Inf ,NaN, Complex numbers
Week 3 **Week 4** **Week 5**	**Variables** - Variable Names - Examples on variable names - Show the results - Examples on (+ , - , * , /) - Outputs Intermediate results during calculations
Week 6	**Built-in-functions** - Trigonometric Functions (sin , cos , tan , sec) Elementary Functions (abs, log10 , log, exp, sqrt)
Week 7 **Week 8**	**Functions** - polyarea (X,Y) - polygon - Standard Deviation - abs function - (max) - (min) (mean)
Week 9	**Logical commands** - Logical Operations > greater than >= greater than or equal < less than <= less than or equal = = equal = ~ not equal - Logical commands or (|), and (&)
Week 10	**Strings manipulation** - Creating Strings save
Week 11 **Week 12**	**Conditional commands** - if end If elseif else function - Examples Problems
Week 13 **Week 14**	**loops** - for - while - Program control

	- Example Problems
Week 15	**Matrices** - Matrices manipulation
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Headway book for learning English	Yes
Recommended Texts	Skills in writing and Learning English	Yes
Websites	https://www.bbc.co.uk/learningenglish/	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.